# Comparing Trends in 2D & 3D Animation

Chris Sinclair
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What is animation? Well, as defined, “animation is a method of photographing successive drawings, models, or even puppets, to create an illusion of movement in a sequence.” (Maio, 2020) At its core, however, animation is a way to breathe life into art. Whether it is through sculpted models or illustrations – if you can imagine it, you can animate it. Having begun animating at a young age, I have always been passionate about the craft even though, ultimately, it became more of a hobby. But one of the things I’ve noticed over the years has been the decline of 2D animation in America, which I found unfortunate since the earliest known animated works were created in the US. Throughout the succeeding decades, a far more professional and formal process was developed and refined to create feature films and television shows. By the end of the century, the era of 3D animation had arrived and 2D animation in the US seemed to fall by the wayside. During that time, Japanese animation – known as “anime” – found enormous popularity around the world and has since become the dominant market for 2D animation. That shift stands at the core of what I would like to talk about.

Let’s start with a brief overview of the history of animation over the last century. In the early 1900s, animation was still a very niche medium of art. It wasn’t until 1914 that Winsor McCay, one of America’s earliest animators, released what is now considered his most famous animated work – *Gertie the Dinosaur*. The concept was presented as though he could speak with the brontosaurus and ask her to do tasks like lifting her feet, dancing, and drinking from the lake. Since the early days of cinema consisted of silent films, Winsor McCay took his show on tour throughout the country and actually pretended to interact with Gertie in front of live audiences as the projection played behind him. It was an instant classic and helped pave the way for later studios to create their own animated works, namely Disney and Warner Bros.

The rivalry between Disney and Warner Bros. still rages on to this day, but in the early years of their inception around 1930, they each developed unique styles of animation that are still signature to their brands. Disney had a more cute, family-friendly approach with characters like Mickey Mouse and Donald Duck, whereas Warner Bros. had a wild and zany style with the Looney Tunes ensemble. In 1937, Disney ended up revolutionizing the role of animation in the world of cinema with the first fully-animated feature film, *Snow White and the Seven Dwarfs*. On the other hand, Warner Bros. pushed their innovations further into the world of television with continued development of comical shorts like *What’s Opera, Doc?* This style was further explored when key talent from Warner Bros. departed to work for Hanna-Barbera Cartoons under Metro-Goldwyn-Mayer Studios, which resulted in the expansion of the *Tom and Jerry* franchise as well as TV specials like *How the Grinch Stole Christmas*.

By the start of the 1960s, animation rapidly grew in the relatively new medium of television due to the rise of Hanna-Barbera and its most famous animated sitcoms – *The Flintstones, The Yogi Bear Show*, and *The Jetsons*. One of the main reasons they were able to efficiently produce so many different franchises was because they would regularly recycle animation from other works. This had been done before by Disney for their films, but hadn’t

been used so effectively for making television shows. From there, a healthy animation industry began to flourish.

Other countries began to dip their toes into the waters of this growing industry, producing their own works. In the late 1970s, Japan became the first country to surpass America with how many new animation studios were being founded. A healthy competition was forming on a global scale and many original works in both film and television were seeing significant mainstream success. Formal education in animation started being introduced by universities that saw it fit to offer their own programs. The industry continued to grow pretty steadily throughout the 1980s, but a couple peculiar things began to happen by the end of the decade: the established powerhouse of Disney Animation Studios was at risk of being shut down, and the rise of computer technology began to pique the interest of the animation community. These two items would precipitate what is considered to be the next great revolution in animation since *Snow White and the Seven Dwarfs*.

"The Disney Renaissance" encompasses the era of Disney-animated feature films between the years of 1989 and 1994. Classics such as *Who Framed Roger Rabbit, The Little Mermaid, Beauty and the Beast, Aladdin*, and *The Lion King* all played an enormous role in putting Disney Animation back at the forefront. Furthermore, 1995 saw Pixar's cinematic debut with the very first feature length computer-animated film, *Toy Story*. Computers were already being utilized for animated special effects work, namely by Industrial Light & Magic (ILM) for films like *Star Wars* and *Jurassic Park*. However, a fully computer-animated film had never been done before and *Toy Story* proved to be a shot across the bow of the animation industry. With its enormous success, the entire industry began to shift and move towards 3D animation. By the end of the 90s, all of the other major American animation studios had almost entirely moved to 3D animation as the new standard, as it was more cost-effective and still had the "wow" factor of being computer-generated.

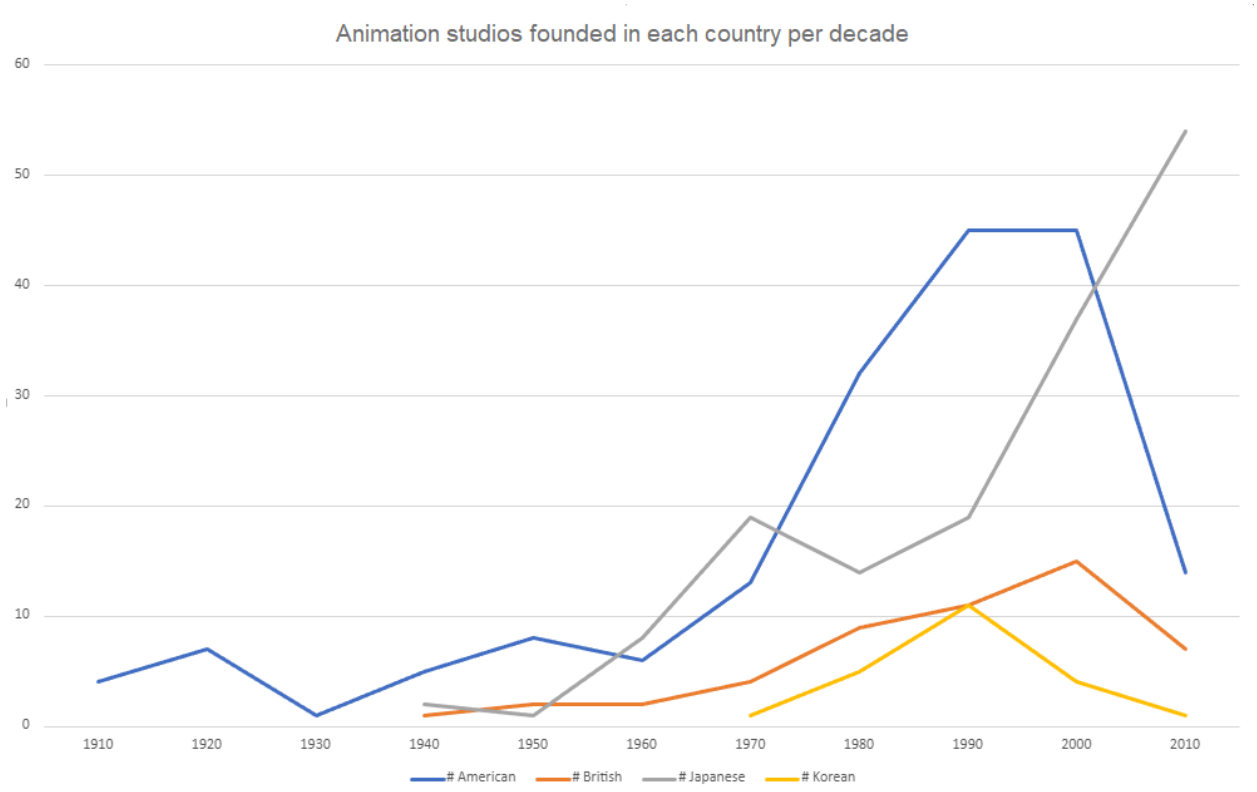
Under the radar, however, was a burgeoning 2D animation industry in Japan. Some of the strongest franchises began finding crossover success on American television – namely *Pokémon* and *Dragonball Z*. The success of these animes led to a boom in the Japanese industry as well as further global interest in anime. As more audiences were exposed to this relatively new form of animation through these television series, there came a natural interest in anime feature films. This led audiences to the well-established Studio Ghibli, especially the work of their most prolific director, Hayao Miyazaki – often regarded as "The Walt Disney of Japan". At the time, Studio Ghibli was famous for relying almost entirely on the classic traditional animation process with pencil-to-paper, animation boards, and ink cells. They only chose to adopt computer technology for measured use in their films starting in 2001 with *Spirited Away*.

As the interest in anime grew through the 1990s and 2000s, the US animation industry continued shifting more firmly towards 3D animation. With this becoming the dominant trend, the market for aspiring 2D animators dwindled and ultimately found its niche in TV or web series. By the start of 2010, the idea of being part of a 2D-animated feature film with a theatrical release was outright far-fetched.

In my research of this topic, I needed to make distinctions of different types of animation. Since the focus is on 2D and 3D animated works, I would not factor stop-motion animation into my data. Furthermore, in the animation community there is a marked difference between the terms "traditional animation" and "2D animation". In essence, traditional animation used all of

the original approaches to the craft before computers. 2D animation seems to be defined by the computer boom and the idea of using a stylus on a screen rather than a pencil on an animation board. It's a fairly frivolous distinction within the community, so I chose to lump both of them into the category of 2D animation because at the end of the day, it's about the fact that the animation is drawn rather than modeled in a computer. With those boundaries in place, I felt comfortable moving forward to gather my data.

To gauge the rise of animation in different countries, I would first need to look at the main ones that came to mind since my background in animation has kept me somewhat aware of what regions have established industries. There are a few studios in Europe that have produced good work, but Great Britain seems to have the strongest foundation of an animation community in that region. Furthermore, in my initial assessment of the rise of anime, I was under the impression that South Korea had a stronger industry than it does. That's not to say that it's small, but it is well-eclipsed by the Japanese industry. Below is a line chart that details roughly how many studios were founded in each country per decade.



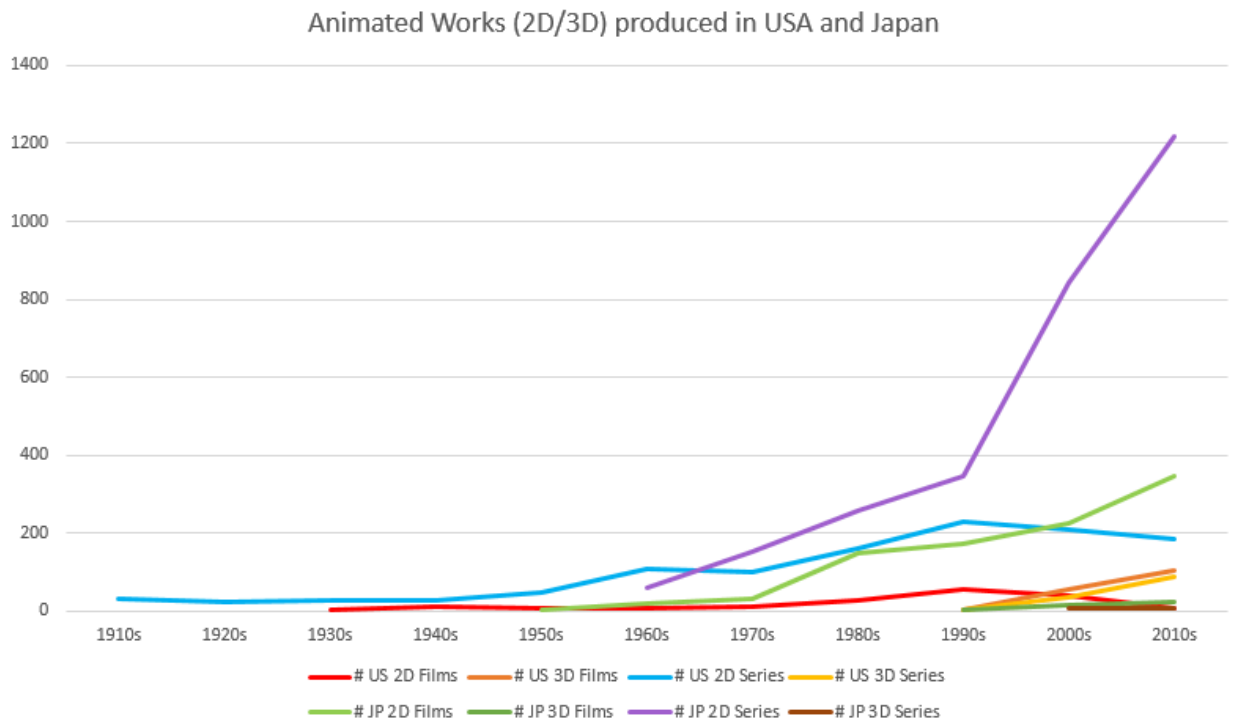

As you can see, the two main countries with the strongest animation industries are America and Japan.There was a brief moment that I mentioned earlier where, in the 1970s, more studios were founded in Japan than in America. That was short-lived though as the 1980s and 1990s saw a rapid increase in studios founded in America. However, one can see very clearly that the 2010s saw a major decrease in American studios while Japan continues to see large increases. It should be mentioned that this chart only pertains to studios founded – it does not cover longevity of various studios or how active they may be in their respective realms (film,

television, web, advertising, special effects, etc.). The one major takeaway that I did gather from this chart is that, to cut down on time and further emphasize my initial point, it would be safe to really focus on the US and Japan. South Korea and Great Britain have industries, but they pale in comparison.

Focusing on the actual works of the studios in the US and Japan, I looked at the body of work of over 350 individual studios in both of the countries. As I was sifting through each page to assess how things would shake out in a fair comparison, I first needed to make a few more key distinctions:

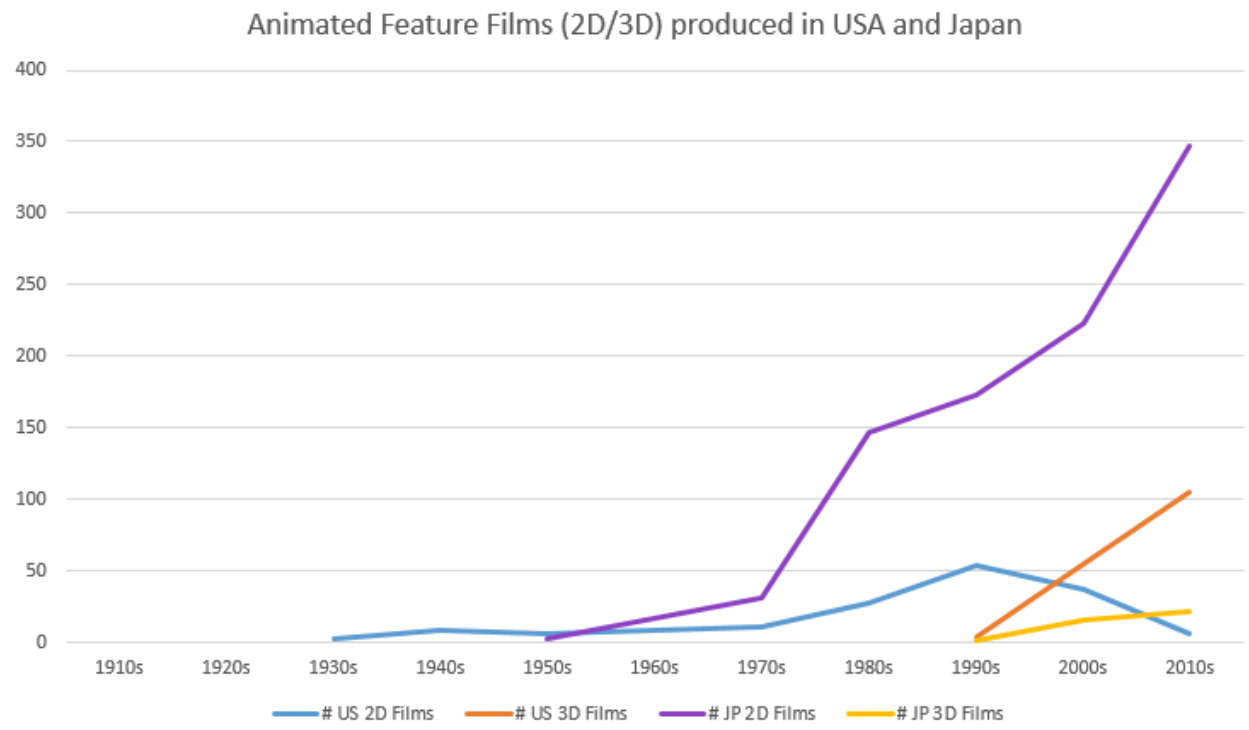
1. All 2D animated works would need to be distinguished and listed separately from 3D works. There is the occasional crossover with films or shows that combined 2D and 3D, so I used my best judgment to determine which medium was emphasized in that work.
2. I didn't want to give any reason to infer that the lack of 2D-animated films also meant a downhill slope in 2D-animated works altogether. For this reason, I also made the above 2D/3D distinctions but with "series". I kept the term "series" relatively vague since I felt that the earliest animated shorts that lasted only a few minutes at a time should count as a series. On the other hand, I also felt that modern day web series on YouTube and other online platforms should fall within the scope of that term. The main bulk of animated works in the "series" category, though, was television.
3. I needed to avoid redundancy in the fairly common situation where multiple studios worked on a project. Also, I had to adjust for the differences in how listings were assigned. For instance, American listings for series were designated with the span of seasons that the show aired (ie. "Rugrats 1991-2004"). In Japanese listings, each individual season of a show had a different name and was designated as a separate item. These were both challenges in minimizing redundancy but I again used my best judgment to determine if each listing was an individual series or just a new season of an already-established series, the latter being discarded.

With that in mind, below is another chart that outlines 2D/3D-animated films per decade *as well as* 2D/3D animated series:




The most obvious takeaway from the above chart is that, with over 1,200 2D-animated series in the 2010 decade, Japan's animation industry essentially skews the entire chart to the point where it becomes hard to decipher the nuances of the other categories. This illustrates how dominant Japan's industry has become with anime. The internet has brought in a lot of interest from around the world and it has most definitely helped to fuel the industry to meet demand for more content. It's also worth pointing out that, even though the US doesn't seem all that competitive in comparison, it's safe to say that it is still a healthy and vibrant scene. A lot of the 2D-animated work has been relegated to the "series" category, but overall, when combined with the 3D-animated work, the US is still producing plenty of content.

However, since the main point of this paper focuses on animated feature films, it would be worth taking a more focused look at that particular category. Below is the final chart that details, specifically, the trends of these two animation industries as they pertain to the medium of feature films with theatrical releases:




As theorized from the outset, with roughly 350 films in the 2010s decade, Japan is clearly shown to produce more 2D-animated feature films than the US. Also, the US has clearly shifted its resources and talent almost exclusively to 3D-animated feature films, with roughly 115 films in the same decade and only six 2D-animated feature films. Interestingly, Japan doesn't seem to have much of a focus on 3D animation in general. For this reason, it could be argued that the Japanese industry is simply filling the void of 2D animation that the US studios have mostly abandoned.

Some of the potential issues in my research would come down to some of the aforementioned ones like redundancy, overlap of multiple studios working on the same projects, and occasional miscategorization of projects that utilized both 2D and 3D animation. Another issue worth noting would be the relatively new industry of video games. There have been a lot of game development studios founded in the last few decades, some focusing on 2D-animated games, others on 3D games. Factoring in that industry would most certainly have put an interesting spin on the data. There is also the issue of what types of projects are released. I tried to limit it to either theatrical releases or "series" as outlined earlier. However, there are many television specials, television movies, and straight-to-video film releases that I decided not to factor in as I didn't feel those were relevant to the larger point of 2D and 3D-animated feature films. Finally, one market that produces an enormous amount of animation that I chose to ignore entirely would be advertising. The main reason is a logical one – that it would be impossible to gauge how many advertisements are animated per year by each studio over the course of a century.

All in all, I found it very surprising how much of a gap there was between these two countries with the strongest animation industries. Japan's industry has completely eclipsed

America's in quantity of 2D-animated content. I will say, however, that in terms of variety, the US is probably stronger suited overall. The anime genre is highly generic with most of it sporting a similar overall look, feel, and even story. It strikes me as severe oversaturation, perhaps some kind of overadaptation to the rapid increase in global interest in the genre. On the flipside, although the US 2D animation scene is generally relegated to series, of which it's produced roughly one sixth the amount of new series as in Japan in the 2010s, the variety and unique style of each show has its own worth. As the saying goes, "quality over quantity". Obviously there are exceptions to every generalization, but regardless, I was surprised to see how extreme these animation industry trends are moving and I hope to see some leveling out of the field, especially as other countries start finding their feet with their own unique animated works.

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